The Utility Gain of Leaving Professional Judgment Out of Prediction

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Introduction

Despite the large amount of research supporting the validity and effectiveness of using a mechanical, algorithm-based approach for combining predictor scores (Gough, 1962; Goldberg, 1968; Grove & Meehl, 1996; Grove et al., 2000; Kuncel et al., 2013; Meehl, 1965, Sawyer, 1966; Sines, 1970), the procedures used by practitioners often reflect a preference for a clinical approach to data combination focusing on using professional judgment (Vrieze & Grove, 2009). One possible way of increasing the use of established personnel selection research methods in applied practice is to encourage the acceptance of research results by presenting them in financial terms by using utility analysis (Cascio, 2000). An increased awareness of the factors that may impact the differences in utility between available options is also a prerequisite for evaluating, comparing, and making rational choices about which data collection- and combination approach to use for prediction purposes. The aim of this study was to estimate and illustrate in the differences between clinical and mechanical approaches to data combination in financial terms using General Mental Ability (GMA) and the personality traits of the five factor model (Emotional stability, Extraversion, Openness, Agreeableness, and Conscientiousness) as predictors of job performance.

Method

Using Brogden's (1949) and Cronbach and Gleser's (1965) utility equation, the meta-analytically estimated operational validity of R = .71 from Sjöberg, Sjöberg, Näswall and Sverke (2012) was utilized to represent the validity for the mechanical data combination of GMA and the five factor model personality traits. The meta-analytically estimated decrease of R = .16 in Kuncel, Klieger, Connelly and Ones (2013) for combining job performance predictors clinically instead of mechanically corresponds to a predictive validity of R = .55 for the same set of predictors. By applying Schmidt, Hunter, Outerbridge, and Trattner's (1986) standard deviation of job performance as 40% of an annual salary of $50,000, thus $20,000 per employee, the margin utility of the data combination approach was estimated for 100 applicants and two selection ratios: 30% and 70% respectively (Schmidt & Hunter, 1998). The cost of applying a clinical and a mechanical approach for data combination was taken into account in the utility analyses as well as tenure and number of applicants.

Results

The results show that the differences in validity between the data combination approaches contribute to an extensive financial gain of applying a mechanical data combination approach compared to a clinical approach. Across a five year period, approximately half a million dollar could be gained by applying a mechanical data combination approach compared to a clinical combination approach

		Selection Ratio 70 %					Selection Ratio 30 %				
Method	**rxy**	***U***	**T**	***U***	**C**	**ΔU**	***U***	**T**	***U***	**C**	**ΔU**
MC	.71	$7,100	$35,500	$2,485,000	$0	$2,485,000	$16,472	$82,360	$2,470,800	$0	$2,470,800
CC	.55	$5,500	$27,500	$1,925,000	$100,000	$1,825,000	$12,760	$63,800	$1,914,000	$100,000	$1,814,000
ΔU	.16	$1,600	$8,000	$560,000	$100,000	$460,000	$3,712	$18,560	$556,800	$100,000	$456,800

Note. MC = mechanical data combination; CC = clinical data combination; *ΔU* = margin utility; rxy = validity; *U* = utility gain per employee/year; T = tenure of 5 years; C = cost for N = 100 candidates.

Discussion and conclusion

The illustrated margin utilities between the two data combination methods are sizable and likely to have a severe impact on the success or failure of organizations. Emphasizing the importance of the data combination process and the superiority of the mechanical approach in utility terms can help professionals become aware of how to increase organizational performance by improving their selection practice. This study also illustrates how available and highly generalizable meta-analytic estimates can be utilized (Sjöberg et al., 2012; Kuncel et al., 2013; Schmidt, Schaffer & Oh, 2008) in order to estimate utility. Communicating research evidence in terms of utility serves several purposes. First, it makes the financial impact of applied selection strategies tangible compared to solitary validity coefficients. Second, this increases the probability of acceptance and awareness of effective selection strategies. Third, evaluating and comparing selection strategies from a financial perspective is necessary in order to make sound and rational choices about which data collecting and combining approach to use for prediction purposes. And last, it provides the opportunity for practitioners to refer to this knowledge and utilize it when discussing human resource strategies, such as personnel selection, and argue for their work within their organizations.